TECHNICAL REVIEW DOCUMENT
For
RENEWAL OF OPERATING PERMIT 96OPEP152

Colorado Springs Utilities
Clear Spring Ranch – Solids Handling and Disposal Facility
El Paso County
Source ID 0410091

July 2012

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I. Purpose

This document establishes the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed Operating Permit for the Colorado Springs Utilities Clear Spring Ranch - Solids Handling and Disposal Facility. The previous Operating Permit for this facility was issued on July 1, 2007 and expired on July 1, 2012. However, since a timely and complete renewal application was submitted, under Colorado Regulation No. 3, Part C, Section IV.C all of the terms and conditions of the existing permit shall not expire until the renewal operating permit is issued and any previously extended permit shield continues in full force and operation.

This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted on July 1, 2011, previous inspection reports and various email correspondence with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at http://www.cdphe.state.co.us/ap/Titlev.html. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

This facility provides for the treatment and disposal of the sludge from the Las Vegas Wastewater Treatment Plant and the J.D. Phillips Reclamation Facility. Blended sludge from the Las Vegas Street treatment plant is pumped to the Clear Spring Ranch Solids Handling and Disposal Facility (SHDF) through an 18-mile fiberglass reinforced pipe. The sludge is stored in a receiving station and pumped sequentially to the anaerobic digesters. The typical hydraulic residence time in a digester is a minimum of 15 days. During the time sludge resides in a digester, volatile solids are destroyed, biogas is produced, and the sludge volume is reduced. Digested sludge is pumped to facultative sludge basins (FSBs) for long term storage (3-5 years). Supernatant from the FSBs are periodically discharged to supernatant lagoons. The FSBs are periodically taken out of service and dredged in order to remove the digested sludge. Sludge is sub-surface injected into dedicated land disposal units. Fugitive particulate emissions occur as a result of sludge injection and traffic on unpaved roads.

Produced biogas is used to power four boilers, which primarily function to generate heat for the digesters. The boilers are also designed to use distillate fuel oil as backup when digester gas is unavailable. The facility also operates two flares to combust excess digester gas that cannot be used in the boilers.

The facility is located in El Paso County at 14391 Auge Way near Fountain, Colorado, approximately 17 miles south of Colorado Springs. The area in which the plant operates is designated as attainment for all criteria pollutants.

There are no affected states within 50 miles of the plant. There is no Federal Class I designated area within 100 kilometers of the facility. Florissant Fossil Beds National Monument is a Federal land area within 100 kilometers of the facility. Florissant Fossil Beds has been designated by the State to have the same sulfur dioxide increment as a Federal Class I area.

This facility is located in an area designated attainment for all pollutants. It is categorized as a major stationary source (Potential to Emit > 250 Tons/Year for PM, PM_{10}, SO_2, NO_x, CO) when considered with the other associated operations. Future modifications at this facility resulting in a significant net emissions increase (see Reg 3, Part D, Sections II.A.26 and 42) for any pollutant as listed in Regulation No. 3, Part D, Section II.A.42 or a modification which is major by itself may result in the application of the PSD review requirements.

Emissions at the facility are as follows:

	Potential Emissions (tons/yr)					
	NO_X	CO	VOC	SO_2	PM	PM_{10}
Clear Spring Ranch SHDF						
Boilers and Flares	49.46	105.65	1.10	52.50	4.30	3.15
Nixon						
Facility	3,652	724	74.2	10,572	1,255	1,223
Total Source	3,701	830	75.3	10,625	1,259	1,226
Clear Spring Ranch Actual Emissions (2009)	6.32	18.81	0.11	32.07	0.58	0.58

Emissions are based on worst case fuel scenario for each pollutant.

Applicable Requirements

NSPS Subpart Dc

The provisions of 40 CFR Part 60 Subpart Dc apply only to boilers with a maximum design heat input capacity greater than 10 MMBtu/hr. Since the derating of the boilers below the 10 MMBtu/hr threshold, the units are no longer subject to the requirements in Subpart Dc. Accordingly, the units are also no longer subject to the general provisions in 40 CFR Part 60 Subpart A.

NSPS Subpart IIII

An emergency diesel fired generator located at Clear Spring Ranch SHDF is potentially subject to the requirements of NSPS Subpart IIII. The generator was installed prior to the applicability date of the rule and therefore NSPS Subpart IIII does not apply.

NSPS Subparts CCCC and DDDD

The requirements in NSPS Subpart CCCC and DDDD apply to Commercial and Industrial Solid Waste Incinerators. The biogas from sludge digestion does not qualify as a solid waste under the rule, since it is not a contained gaseous refuse, and therefore the requirements of these subparts to not apply to any equipment at the Clear Spring Ranch SHDF.

NESHAP Subparts ZZZZ

There is one emergency diesel fired engine at the Clear Spring Ranch SHDF with a power rating of 755 HP.

The initial RICE MACT was published in the Federal Register on June 15, 2004 and has since undergone several amendments. Under the rule, existing emergency engines

greater than 500 HP located at major sources of HAPs are not subject to any requirements (including initial notification) per §63.6590(b)(3)(iii).

The emergency engine at this facility was placed in service prior to June 12, 2006 and is therefore considered an existing engine, which is not subject to any requirements in Subpart ZZZZ and Subpart A provided the engine is operated in accordance with the definition of emergency engine in §63.6640(f)(2). If the engine is used for peak shaving or to supply power to grid, or operates in non-emergency situations for over 50 hours per year, the engine will no longer be considered emergency and will be subject to the non-emergency applicable requirements in Subpart ZZZZ. The engine is not limited in operating during emergency situations. The Division considers an emergency situation an event that is sudden and unplanned.

NESHAP Subpart DDDDD

The boilers at this facility are potentially subject to the requirements for industrial boilers at major sources of HAPs. The National Emission Standards for Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters was initially promulgated in 2004. Since the rule was initially promulgated in 2004, several proposed amendments and reconsiderations have. A new final rule was published in the Federal Register on January 31, 2013. Under the new versions of the rule, the boilers are subject to periodic tune-ups in accordance with §63.7540. The applicable provisions were added to the operating permit.

Compliance Assurance Monitoring

The compliance assurance monitoring (CAM) requirements in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV apply to emission units equipped with control devices that are necessary to meet emission standards. The uncontrolled H_2S emissions exceed 100 ton/yr. The boilers and flares reduce the H_2S emissions by 96%. However the boilers are not considered control devices since they are primarily used to generate heat for the sludge processing units. The flares are not necessarily used as control devices for H_2S emissions but are used to get rid of excess digester gas that cannot be used in the boilers. Therefore, no emission units addressed in this permit are equipped with control devices and the Compliance Assurance Monitoring (CAM) requirements do not apply to any emission units at this facility.

Greenhouse Gases

The potential to emit greenhouse gases at this facility exceeds 100,000 TPY CO_2e. Future modifications at this facility that exceed 75,000 TPY CO_2e may be subject to regulation. On July 20, 2011, a final rule regarding biogenic CO_2 emission was published in the Federal Register. This final action defers, for a period of three years, the application of the Prevention of Significant Deterioration (PSD) and Title V permitting requirements to carbon dioxide (CO_2) emissions from bioenergy and other biogenic stationary sources (biogenic CO_2). As it relates to this facility, biogenic CO_2 includes all CO_2 generated from the combustion of biogas collected from the biological decomposition of waste in wastewater treatment. Note that the emission of biogenic methane is still a contributing factor in calculating greenhouse gas emissions.

III. Discussion of Modifications Made

Source Requested Modifications

The following modification applications were submitted prior to the renewal application and had not yet been incorporated into the Title V at the time of renewal:

- CSU submitted a request on October 29, 2010 to modify the operating permit to physically reduce the design maximum heat input rate of three boilers. The source requested that approval be given to modify the three existing 10.46 MMBtu/hr boilers to physically derate them to 9.5 MMBtu/hr each. In their request the source indicated that the modification met the requirements for a minor permit modification and requested that the modification be processed under the minor modification procedures in Colorado Regulation No. 3, Part C, Section X. The source requested emissions based on the existing Title V emission factors and existing fuel use limitations in the Title V permit. As such, the emission limits are not changing. Requested emissions for physical modification are below the PSD significance levels.

- A second modification request was submitted to the Division on February 28, 2011 to reflect a revision in the physical derating based on the actual work performed on the boilers on February 11, 2011. The realized change to the maximum heat input was different than expected and the boilers were certified to 9.9588 MMBtu/hr.

  This physical modification consisted of replacement of the boiler impellers and blowers with equipment from a manufacturer certified derate kit designed to lower the maximum heat input rate to 9.5 MMBtu/hr each. New boiler nameplates were installed to reflect the actual certified design rate of 9.9588 MMBtu/hr.

- The Division requested that CSU provide evidence that the modification would not trigger a PSD major modification since this is a physical change at a major stationary source. CSU provided the actual-to-potential calculations for both modification requests which showed that the modification did not result in a significant emissions increase of any pollutant. The Division reviewed the calculations and agreed that this change has not triggered a PSD major modification.

The renewal application received on July 1, 2011 requested the following:

- Incorporate the derating modification as most recently submitted on February 28, 2011.

- Several minor language changes not effecting the applicable requirements of the permit.

- Corrections to the model numbers and serial numbers listed in the summary of emission units table in Section I, Condition 6.1.

- Revision to the opacity condition's language to specify that visible emissions observations are not required for calendar years in which the boiler has not been operated with distillate fuel.

- Decrease the frequency of biogas sampling from biweekly to monthly.

The source's requested modifications were addressed as follows:

Page following cover page

- Updated the Responsible Official and Facility Contact to match those reported on the submitted form 2000-100 in the renewal application.

Section I – General Activities and Summary

- The listed power rating for the boilers was changed to the new certified design rate of 9.9588 MMBtu/hr

- The model numbers and serial numbers listed in Condition 6.1 were corrected in accordance with the information submitted with the renewal application.

Section II – Specific Permit Terms

- The suggested minor language revisions that were submitted with the renewal application were incorporated into the renewal operating permit.

- The opacity condition was revised to include provisions for forgoing visible emissions observations in calendar years in which the equipment is not operated with distillate fuel. Compliance with the opacity standard is presumed when digester gas is fired in the unit and the source is not required to burn distillate fuel for the sole purpose of conducting a visible emissions observation.

- The frequency of biogas sampling was reduced from every other week to once per month. The source has continuously demonstrated compliance with the 5,000 ppmv H_2S limitation and five years of biweekly biogas sampling have not shown significant variance in H_2S concentration.

Other Modifications

In addition to the source requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal. These changes are as follows:

Section I – General Activities and Summary

- Updated the description of permitted activities in Condition 1.1 to include discussion of the boilers, flares, and fugitive particulates. The previous description did not include information about the permitted pollutant-emitting activities.

- Revised the language in Condition 1.4 include current conditions that are state-only enforceable.

Section II – Specific Permit Terms

- Language was added throughout Condition 1 specifying whether the requirements were applicable to each boiler and flare individually or to the boilers and flare combined.
- The statement in Condition 1.1 regarding SO_X emission calculations was removed. According to the equations listed in Appendix G, SO_X is directly correlated with fuel consumption.
- Condition 1.8 and 1.9 including the requirements of NSPS Subpart Dc and Subpart A, respectively were removed from the permit. The derated boilers are no longer subject to these requirements.
- The requirement in Condition 1.11 to follow an external Division-approved O&M plan was removed. The appropriate provisions from the most recent O&M plan have been directly incorporated into the operating permit.
- Condition 1.14 which included the NESHAP Subpart DDDDD requirements for Industrial Boilers at major source was modified to agree with the new final rule published January 31, 2013.

Section IV – General Permit Conditions

- Updated the general permit conditions to the current version (5/22/2012).

Appendices

- The Division's contact was changed in Appendix D.